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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,157	02/13/2006	Akihiro Koga	10921380USWO	5915
52835	7590	05/09/2007		
HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902			EXAMINER LAM, CATHY FONG FONG	
			ART UNIT 1775	PAPER NUMBER
			MAIL DATE 05/09/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/568,157

Applicant(s)

KOGA ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2-13-2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

In view of the preliminary amendment filed on February 13, 2006, the pending claims are unpatentable as following:

***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on August 14, 2003. It is noted, however, that applicant has not filed a certified copy of the Patent application as required by 35 U.S.C. 119(b).
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. JP 2003-028828, JP 2003-134745, JP 2003-328894 and JP 2004-025066 are priority documents submitted but not mentioned in the Oath or Declaration filed on February 13, 2006.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyauchi et al (US 7158364) or Nakamura et al (US 6346497) or Nakamura et al (US 6620753).

Miyauchi teaches a multilayer ceramic capacitor comprising a plurality of dielectric layers and a plurality of inner electrode layers. The dielectric layers and inner electrode layers are alternately laminated.

Art Unit: 1775

The inner electrode layers are made of nickel or nickel alloy (col 5 L 39-42). The dielectric layers are made up of various dielectric materials, the main component is titanate based oxide material, specifically barium titanate (col 6 L 33-38).

The dielectric material further comprised of metal oxides such as  $Mn_2O_3$ ,  $Y_2O_3$ ,  $V_2O_5$ ,  $Cr_2O_3$ ,  $SiO_2$  (col 6 L 39-42). The dielectric material further comprised of Ba, Ca, Sr, B, Al and Ho (col 6 L 44-47).

All of the above metal oxides are components of the present invention.

Nakamura ('497) teaches a dielectric ceramic composition that is used as dielectric layers in a ceramic capacitor. The ceramic capacitor comprised of a plurality of dielectric layers alternately laminated with a plurality of internal electrodes. The internal electrodes are nickel or nickel alloy material (col 2 L 40-45).

The dielectric ceramic composition includes a main component comprising a barium titanate, an additive component and a sintering additive (i.e.  $ABO_3 + aR + bM$ ) (col 2 L 47-51). With  $ABO_3$  represents barium titanate solid solution, R represents metal oxides such as  $Ho_2O_3$  and M presents metal oxides such as MnO and  $Cr_2O_3$  (col 2 L 56-59). Additional metal oxide additive components can be Ba, Sr and Ca, and V and Y (col 2 L 65-67). The sintering additives are B and Si (col 3 L 12-13).

Nakamura ('753) also teaches a dielectric ceramic material that is used for dielectric green sheet and carries inner electrodes. The dielectric material are used as

Art Unit: 1775

dielectric layers in a multilayer ceramic capacitor. The inner electrodes are formed of nickel material (col 1 L 38-41).

The dielectric ceramic material contains mainly barium titanate (col 1 L 20-21). The dielectric ceramic material further comprised of metal oxides such as Ho, Y, Cr, Mn (col 3 L 1-5). An additional accessory metal oxides such as Si and additional metal oxides such as V, B and Al are included in the dielectric ceramic material (col 5 L 14-15 & L32).

All three prior art teach a dielectric ceramic material that is used as a dielectric layer in a ceramic capacitor. The dielectric layers are alternately laminated with nickel inner electrodes.

The prior art however do not teach the specific claimed mol% of the each metal oxide.

In view of the prior art teachings, one skill in the art would obtain the inventive ceramic composition with much difficulties because finding an optimum composition involves only routine laboratory work.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl

May 07, 2007